



HAYES Environmental

A Women-owned Business Enterprise

Attachment A, Block 18
Nature of Activity

COE No. 2004-10704
Sorensen Park Plaza

Identified on-site, and verified by a representative of the Corps of Engineers, is 1,170 linear feet of intermittent waterway. Associated with the waterway are 0.17 acres of palustrine emergent wetlands with a water regime of temporarily flooded. A total of 1,170 linear feet of bed-and-bank and 0.17 acres of PEMA wetland will be impacted by this project.

A total of 1,190 linear feet of channel will be created on-site to compensate for the loss to the aquatic resource of the existing bed-and-bank. Wetland impacts will be mitigated on-site at a ratio of 3:1, to satisfy the Corps of Engineers and the City of Omaha wetland mitigation requirements, resulting in 0.51 acres of mitigated PEMA wetland.

The channel relocation is designed to flow into and through a dry-bed detention area. During construction this will be utilized for sediment detention. After construction it will accommodate precipitation surges. The relocated channel is designed with two drop structures. One drop structure/rock water feature will be utilized to slow the velocity of the water as it enters the dry-bed detention basin. The other smaller structure is located in the upper portion of the relocated channel. Wetlands will be mitigated in the southern section of the basin and along the lower portion of the relocated channel.

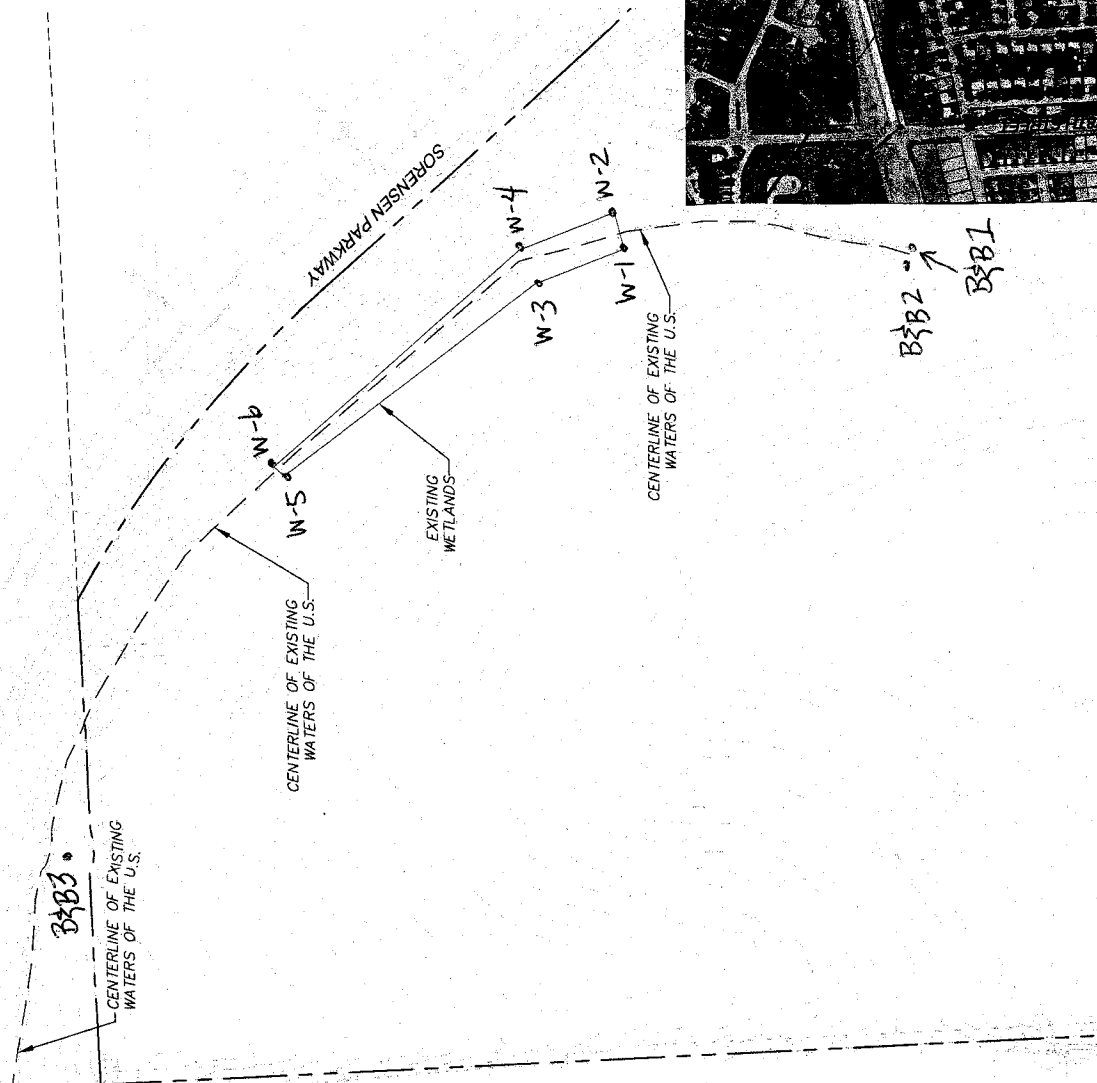
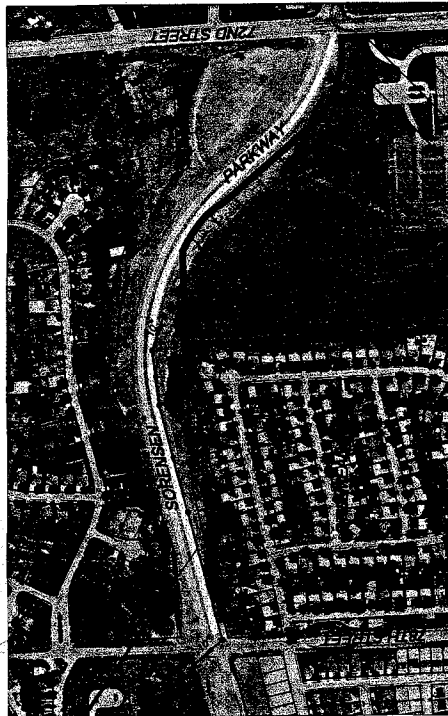
Approximately 300-feet of the upper section of the existing waterway will be relocated a minimum of 50-feet and a maximum of 300-feet to the south. The remainder of the channel, the lower portion, will only be relocated approximately 30-feet from its existing location.

The upper portion of the relocated channel is designed with a 5-foot bed and 2-foot banks with 3:1 slopes. These dimensions are illustrated as Section A-A on the attached Exhibit 1 - Channel Plan and Sections. A buffer zone measuring a minimum of 20-feet along each side will be included in the upper portion of the relocated channel. The buffer areas will be seeded to a native short grass mixture. All seeding documentation will be submitted to the Corps office.

The middle portion of the relocated channel will involve a drop structure/rock water feature. Details of this structure are illustrated as Section C-C on the attached Exhibit 1 - Channel Plan and Sections.

The lower portion of the relocated channel, within the dry-bed detention basin, is designed with a 5-foot bed and 1-foot banks with 3:1 slopes. The northern edge of this section of relocated channel abuts the future toe of slope. This design mimics the existing flow of the lower portion of the waterway, which abuts the toe-of-slope of the Sorensen Parkway embankment. The future toe-of-slope will act as the buffer on the north edge of this area of the relocated channel. The south edge of the lower portion of the relocated channel will include a 30-foot buffer. Dimensions of this section are detailed in Section B-B in the attached Exhibit 1 – Channel Plan and Sections.

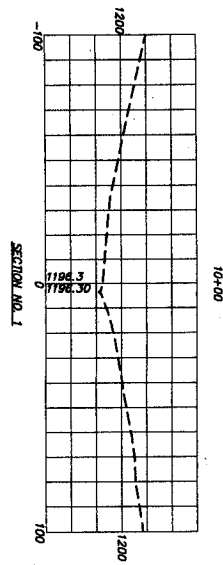
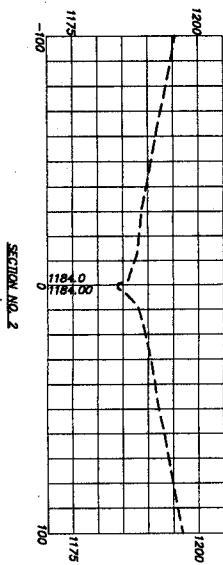
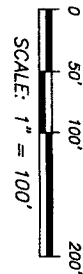
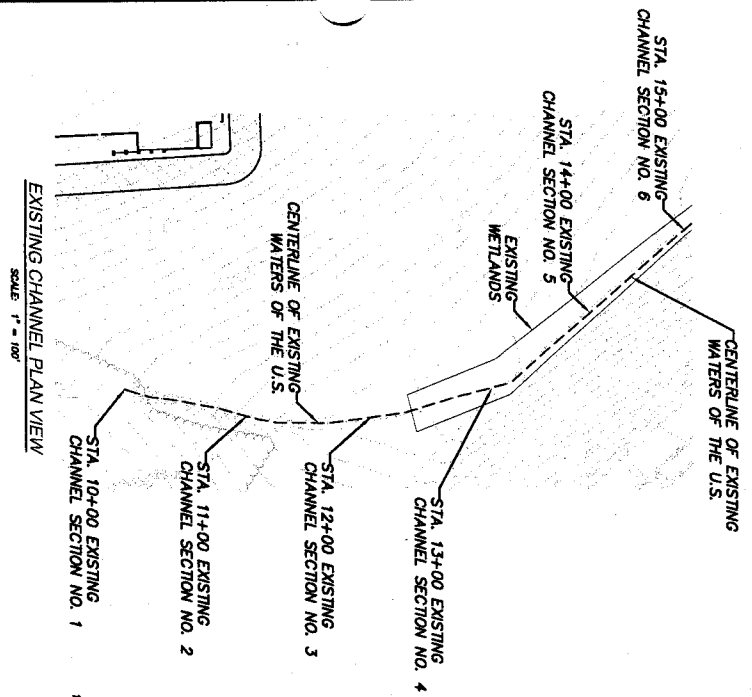
A total of two 15-inch pipes will inlet from the surrounding parking lots into the relocated channel. These inlets will drain at 5 to 7 cfs. To compensate for reduced buffer areas water quality filter solutions will be implemented on the inlets.



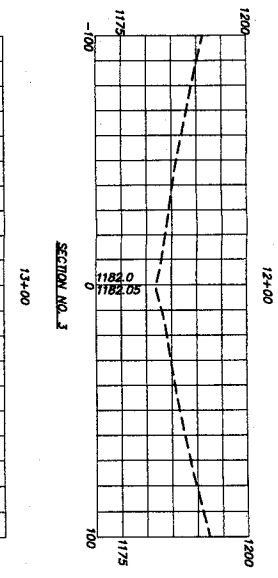
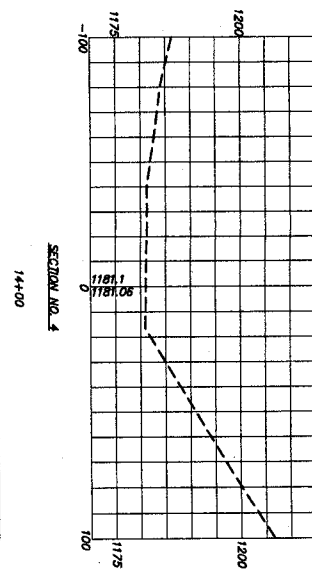
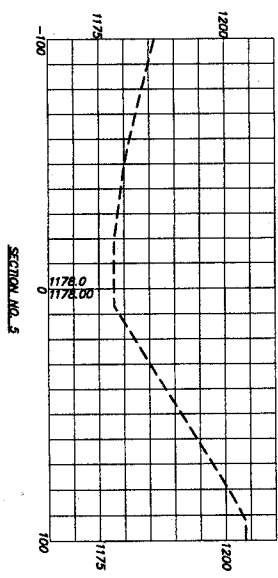
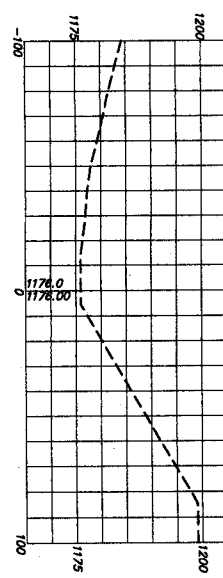
EXISTING CHANNEL PLAN VIEW
SCALE: 1" = 100'

REDUCED FROM 11X17 DRAWING

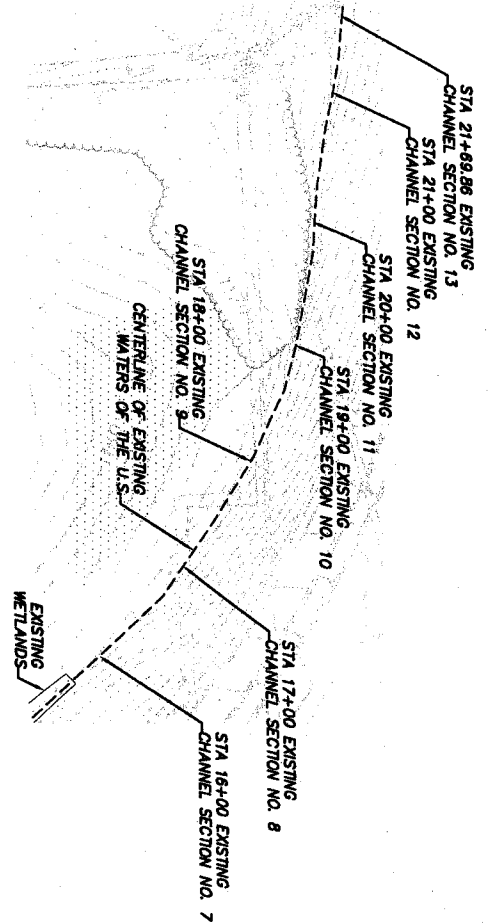
REDUCED FROM 11x17 DRAWING



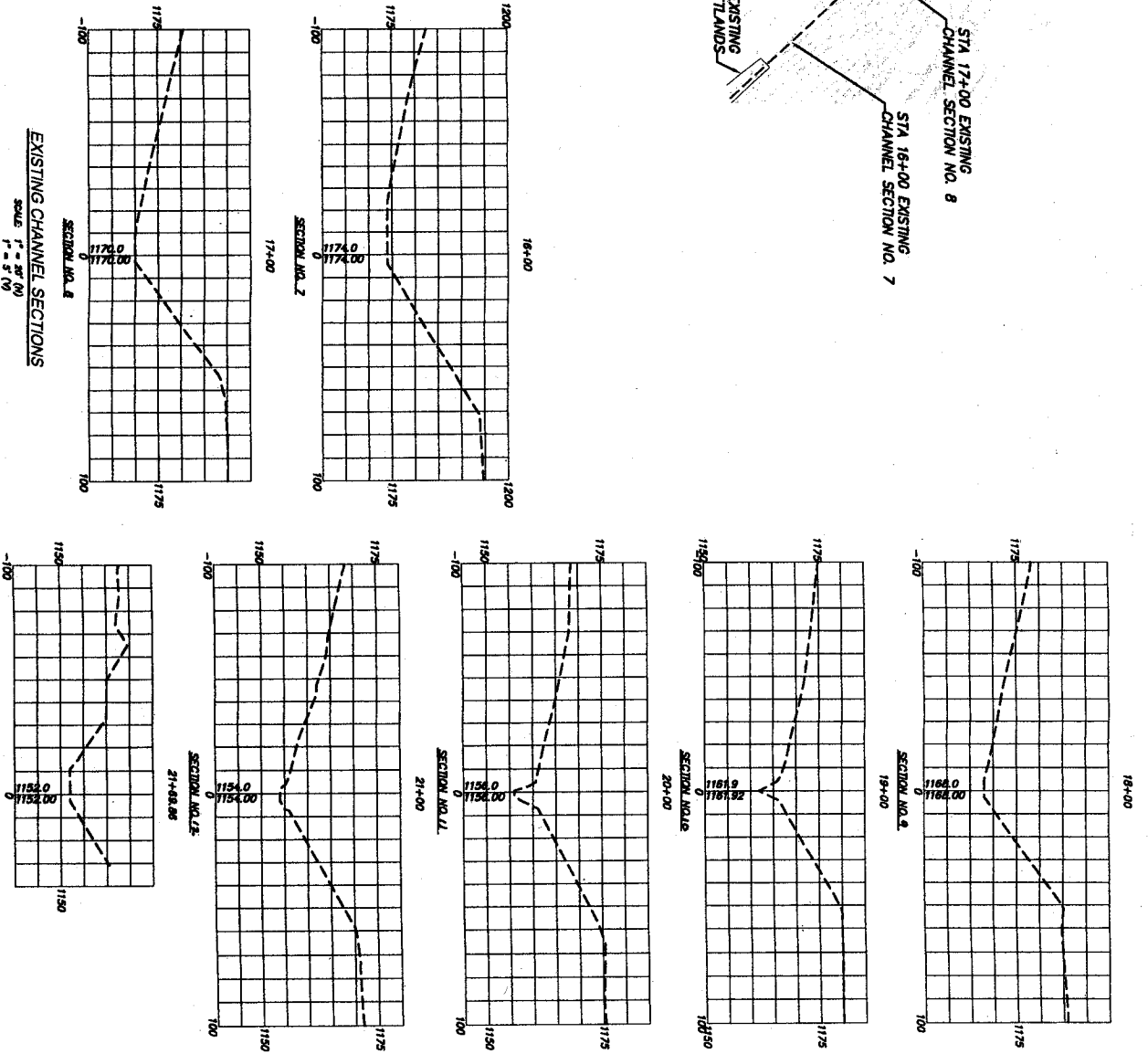
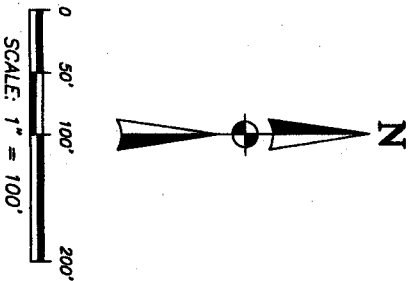
EXISTING CHANNEL SECTIONS
SCALE: 1" = 20' (H)
1" = 5' (V)



REDUCED FROM 11x17 DRAWING

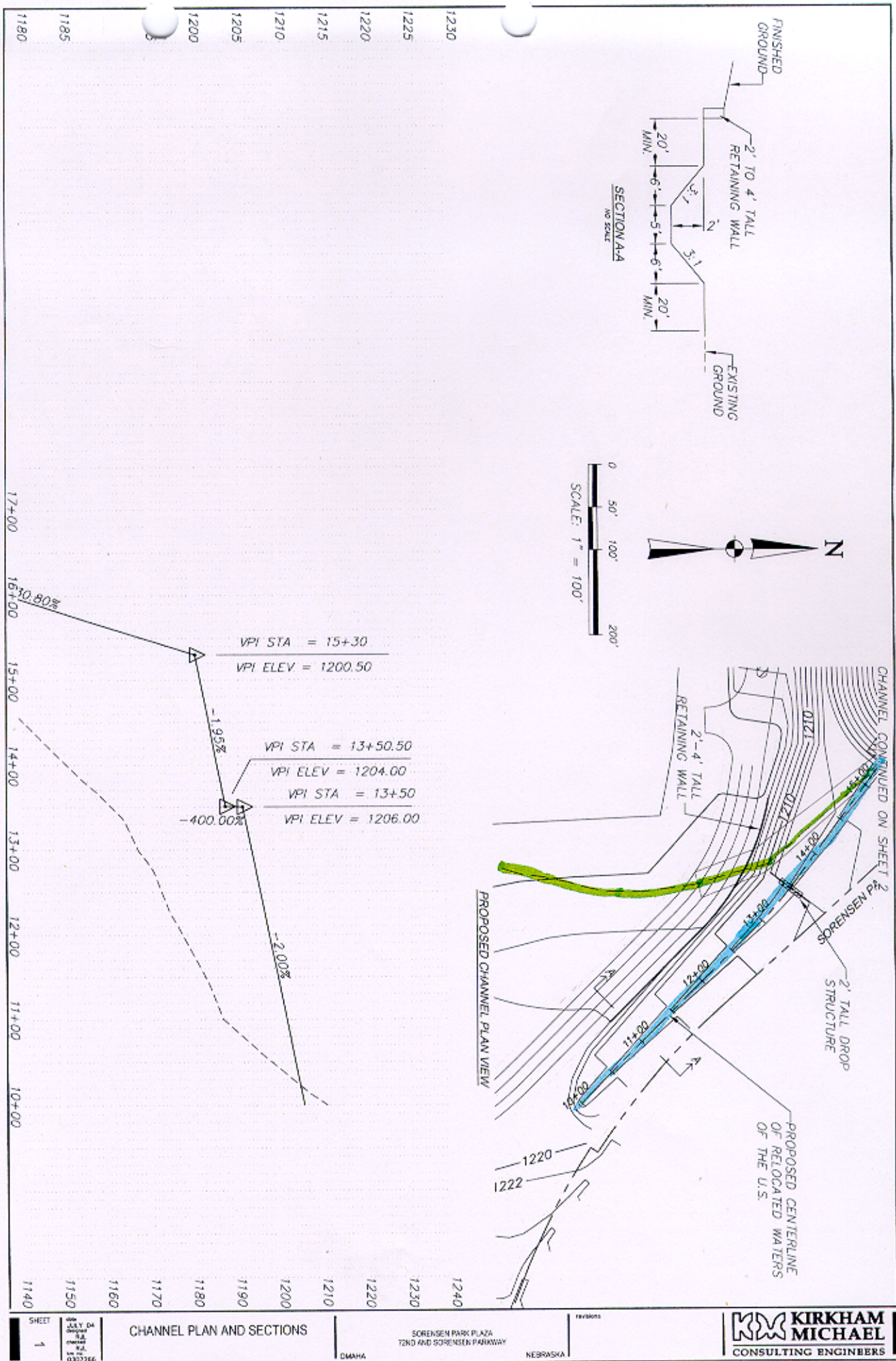


EXISTING CHANNEL PLAN VIEW
SCALE: 1" = 100'



EXISTING CHANNEL SECTIONS
SCALE: 1" = 5' (H)

REDUCED FROM 11417 DRAWING



REDUCED FROM 11x17 DRAWING

